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EXAMINER

HARAN, JOHN T

ART UNIT PAPER NUMBER

1733

DATE MAILED: 09/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicant(s)

09/966,951

FRIEDER, LEONARD P.

Examiner

John T. Haran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2&3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statements (IDS) submitted on 9/28/01 and 3/7/03 have been considered.

Claim Objections

2. Claim 14 is objected to because of the following informalities: it appears the word - - a - - should be inserted between "providing" and "connection region".
Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite because the claim appears to be incomplete. The claim is directed to a method for manufacturing rimless spectacles having lenses and rimless supporting structures, however there is no step of actually connecting, bonding, or fusing the lenses to the rimless supporting structures to form the finished rimless spectacles. It appears from the specification that the exposing step results in the fusing of the lens and supporting structure in the connection region, however such is not claimed. The absence of the stating the exposing step causes fusing renders the claim

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incomplete and indefinite because the scope of the exposing step is unclear if it does not cause fusing. It is suggested amend the claim to incorporate claim 7 by adding - - , thereby fusing the lens to the supporting structure in the connection region - - at the end of the exposing step.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Voit (U.S. Patent 3,824,006) in view of Campbell (WO 01/07524) and Jones (WO 00/20157).

Voit is directed to a method of making rimless spectacles wherein a bonding agent is applied to a lens and a rimless supporting structure at a connection region and the bonding agent, such as epoxy resin, is heated by applying infrared energy which results in a welded bond that fuses the lens to the supporting structure (Column 2, lines 9-57; Figures 2-5). Voit is silent towards the bonding agent comprising a radiation absorbing dye having a predetermined wavelength absorbing band.

It is well known and conventional to include radiation absorbing dyes in resins in order to facilitate thermal curing and bonding as shown for example in Campbell and Jones. Campbell is directed to an infrared absorbing dye having a predetermined wavelength absorbing band (infrared) and teaches that one of its uses is as an additive

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to resins to aid in thermal curing (i.e. to expedite curing) (See page 1, lines 4-8; page 6, lines 15). Jones teaches incorporating an infrared radiation absorbing dye having a predetermined wavelength absorbing band into a thin film of plastic (resin) at a bonding/welding interface to provide localized heating (See page 3, lines 10-20 and 35-38; page 4, lines 25-27).

One skilled in the art would have readily appreciated the benefits of incorporating a radiation absorbing dye into the epoxy resin bonding agent in Voit in order to achieve bonding in a more efficient manner as a result of the known benefits of infrared absorbing dyes in resins such as expedited curing and localized heating. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a radiation absorbing dye having a predetermined wavelength absorbing band in the bonding agent in the method of Voit and to expose the bonding dye to radiation in the predetermined wavelength in order to achieve a bond in a more efficient manner with the known benefits that include expedited curing and localized heating as suggested in Campbell and Jones.

Regarding claims 2-3, and 6-7, Voit teaches applying the bonding agent to both the edge surface of the lens in the connecting region and the edge surface of the supporting structure in the connecting region and fusing the lens and rimless supporting structure together in the connecting region by exposure to radiation (See Figure 4 and Column 2, lines 53-57).

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7. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Voit (U.S. Patent 3,824,006) in view of Campbell (WO 01/07524) and Jones (WO 00/20157) as applied to claim 1 above, and further in view of Anger (U.S. Patent 4,692,001).

Regarding claims 4 and 5, Voit is directed to using metal for the supporting structures and silicate glass for the lenses and there is no suggestion of incorporating a radiation absorbing dye into the silicate glass or the metal supporting structure. However, Jones teaches that when bonding plastics the radiation absorbing dye can be mixed in a separate bonding resin place at the interface or it can be incorporated into the plastics to be bonded (page 4, lines 25-26 and page 5, lines 5-6). It is also well known and conventional for rimless spectacles to have plastic lens and plastic frames or supporting structures, as shown for example in Anger (Column 1, lines 54-58). One skilled in the art would have readily appreciated that a bonding agent would work equally well to bond plastic lens and plastic supporting members as silicate glass lens to metal supporting members. One skilled in the art also would have appreciated that bonding plastics with a separate bonding agent with a radiation absorbing dye or incorporating the radiation absorbing dye into one of the plastics to be bonded are alternate expedients obvious over one another. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use plastic lens and plastic supporting members in the method Voit, as modified above, as suggested in Anger and to incorporate the radiation absorbing dye into the connecting region of the plastic lens or plastic supporting structure, as suggested in Jones.

8. Claims 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Voit (U.S. Patent 3,824,006) in view of Campbell (WO 01/07524) and Jones (WO 00/20157) taken with Anger (U.S. Patent 4,692,001).

Voit is directed to a method of making rimless spectacles wherein a bonding agent is applied to a lens and a rimless supporting structure at a connection region and the bonding agent, such as epoxy resin, is heated by applying infrared energy which results in a welded bond that fuses the lens to the supporting structure (Column 2, lines 9-57; Figures 2-5). Voit is silent towards the bonding agent comprising a radiation absorbing dye having a predetermined wavelength absorbing band.

It is well known and conventional to include radiation absorbing dyes in resins in order to facilitate thermal curing and bonding as shown for example in Campbell and Jones. Campbell is directed to an infrared absorbing dye having a predetermined wavelength absorbing band (infrared) and teaches that one of its uses is as an additive to resins to aid in thermal curing (i.e. to expedite curing) (See page 1, lines 4-8; page 6, lines 15). Jones teaches incorporating an infrared radiation absorbing dye having a predetermined wavelength absorbing band into a thin film of plastic (resin) at a bonding/welding interface to provide localized heating (See page 3, lines 10-20 and 35-38; page 4, lines 25-27).

One skilled in the art would have readily appreciated the benefits of incorporating a radiation absorbing dye into the epoxy resin bonding agent in Voit in order to achieve bonding in a more efficient manner as a result of the known benefits of infrared

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absorbing dyes in resins such as expedited curing and localized heating. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a radiation absorbing dye having a predetermined wavelength absorbing band in the bonding agent in the method of Voit and to expose the bonding dye to radiation in the predetermined wavelength in order to achieve a bond in a more efficient manner with the known benefits including expedited curing and localized heating as suggested in Campbell and Jones.

It is also noted that Jones teaches using infrared absorbing dyes that do not degrade to colored by-products after irradiation (i.e. remain transparent) (See page 3, line 19) and it would have been obvious to use such dyes in the method of Voit in order to avoid undesirable coloration.

Voit is directed to using metal for the supporting structures and silicate glass for the lenses and there is no suggestion of using plastic for the lens or supporting structures. However it is well known and conventional for rimless spectacles to have plastic ophthalmic lenses and thermoplastic frames or supporting structure, as shown for example in Anger (Column 1, lines 54-65). One skilled in the art would have readily appreciated that a bonding agent would work equally well to bond plastic lens and plastic supporting members as silicate glass lens to metal supporting members. Voit also teaches that the supporting structure and lens are shaped to mate together (See Figures 3-5) and one skilled in the art would have readily appreciated shaping the edge of the plastic lens to mate with the profile of the supporting tab. It would have been obvious to one of ordinary skill in the art at the time the invention was made to bond

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plastic ophthalmic lenses shaped or trimmed to mate with the profile of a thermoplastic supporting tab in the method of Voit, as modified above to have radiation absorbing dye in the bonding adhesive.

Regarding claims 9 and 10, Jones teaches near infrared radiation absorbing dyes that transmit all wavelengths in the visible spectrum are preferable and that they convert absorbed radiation into localized heat via vibrational relaxation (page 5, lines 10-20 and lines 35-38). It would have been obvious to use a known type of radiation absorbing dye.

Regarding claims 11 and 12, one skilled in the art would have readily appreciated that the visible light band is part of the electromagnetic radiation spectrum and that dyes that only absorb visible light would work in the same manner as infrared absorbing dyes when incorporated in a bonding agent to heat and cure the bonding agent. One skilled in the art also would have readily appreciated using a visible light absorbing dye that decomposes into invisible by-products following irradiation in order to avoid discoloration and to affect visibility of the glasses. It would have been obvious to use a narrow band visible light absorbing dye that decomposes into invisible by-products following irradiation in the method of Voit, as modified above.

9. Claims 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Voit (U.S. Patent 3,824,006) in view of Anger (U.S. Patent 4,692,001) or Izumitani (U.S. Patent 5,646,706).

Voit is directed to a method of making rimless spectacles wherein a bonding agent is applied to a lens and a rimless supporting structure at a connection region and the bonding agent, such as epoxy resin, is heated by applying infrared energy which results in a welded bond that fuses the lens to the supporting structure (Column 2, lines 9-57; Figures 2-5).

Voit is directed to using silicate glass for the lenses and is silent towards using plastic lenses. However it is well known and conventional for rimless spectacles to have plastic lenses, as shown for example in Anger (Column 1, lines 54-65) or Izumitani (Column 3, lines 58-62). One skilled in the art would have readily appreciated that a bonding agent would work equally well to bond plastic lens to the supporting structures of Voit. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use plastic lenses in the method of Voit as suggested in Anger or Izumitani.

10. Claims 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Voit (U.S. Patent 3,824,006) in view of Anger (U.S. Patent 4,692,001) or Izumitani (U.S. Patent 5,646,706) as applied to claim 13 above, and further in view of Campbell (WO 01/07524) and Jones (WO 00/20157).

Regarding claims 14 and 15, Voit is silent towards the bonding agent comprising a radiation absorbing dye having a predetermined wavelength absorbing band. However, It is well known and conventional to include radiation absorbing dyes in resins in order to facilitate thermal curing and bonding as shown for example in Campbell and

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Jones. Campbell is directed to an infrared absorbing dye having a predetermined wavelength absorbing band (infrared) and teaches that one of its uses is as an additive to resins to aid in thermal curing (i.e. to expedite curing) (See page 1, lines 4-8; page 6, lines 15). Jones teaches incorporating an infrared radiation absorbing dye having a predetermined wavelength absorbing band into a thin film of plastic (resin) at a bonding/welding interface to provide localized heating (See page 3, lines 10-20 and 35-38; page 4, lines 25-27).

One skilled in the art would have readily appreciated the benefits of incorporating a radiation absorbing dye into the epoxy resin bonding agent in Voit in order to achieve bonding in a more efficient manner as a result of the known benefits of infrared absorbing dyes in resins such as expedited curing and localized heating. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a radiation absorbing dye having a predetermined wavelength absorbing band in the bonding agent in the method of Voit, as modified above, and to expose the bonding dye to radiation in the predetermined wavelength in order to achieve a bond in a more efficient manner with the known benefits including expedited curing and localized heating as suggested in Campbell and Jones.

Regarding claims 16-17 and 20, Voit teaches applying the bonding agent to both the edge surface of the lens in the connecting region and the edge surface of the supporting structure in the connecting region and fusing the lens and rimless supporting structure together in the connecting region by exposure to radiation (See Figure 4 and Column 2, lines 53-57).

Regarding claims 18 and 19 Jones teaches that when bonding plastics the radiation absorbing dye can be mixed in a separate bonding resin place at the interface or it can be incorporated into the plastics to be bonded (page 4, lines 25-26 and page 5, lines 5-6). It is also well known and conventional for rimless spectacles to have plastic lens and plastic frames or supporting structure, as shown for example in Anger (Column 1, lines 54-58). One skilled in the art would have readily appreciated that a bonding agent would work equally well to bond plastic lens and plastic supporting members as silicate glass lens to metal supporting members and that when bonding plastics having a separate bonding agent with a radiation absorbing dye or incorporating the radiation absorbing dye into one of the plastics to be bonded are alternate expedients obvious over one another. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use plastic lens and plastic supporting members in the method Voit, as modified above, as suggested in Anger and to incorporate the radiation absorbing dye into the connecting region of the plastic lens or plastic supporting structure, as suggested in Jones.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Chao (U.S. Patent 6,199,981) is directed to a method of making rimless spectacles in which extensions of supporting members are placed in holes in the lenses and then melted or deformed to secure the lens and supporting members together.

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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John T. Haran** whose telephone number is (703) 305-0052. The examiner can normally be reached on M-Th (8 - 5) and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael W. Ball can be reached on (703) 308-2058. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


John T. Haran
Examiner
Art Unit 1733